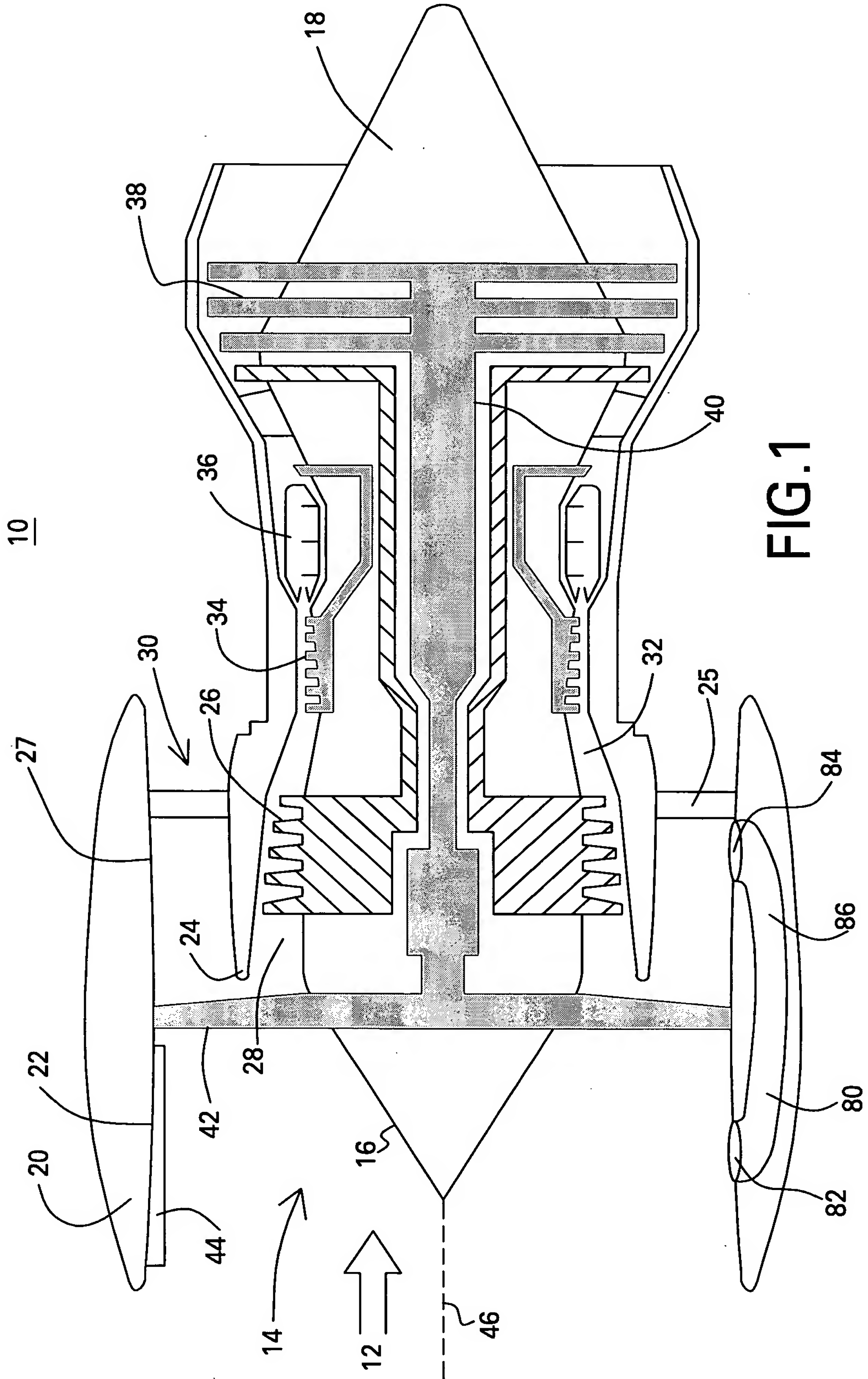




Ser. No: 10/664,695
Inventors(s): Ramani Mani
Docket No.: 125643
Attorney: P. Patnode
Telephone: (518) 387-5286

1/9





Ser. No: 10/664,695
Inventors(s): Ramani Mani
Docket No.: 125643
Attorney: P. Patnode
Telephone: (518) 387-5286

2/9

10

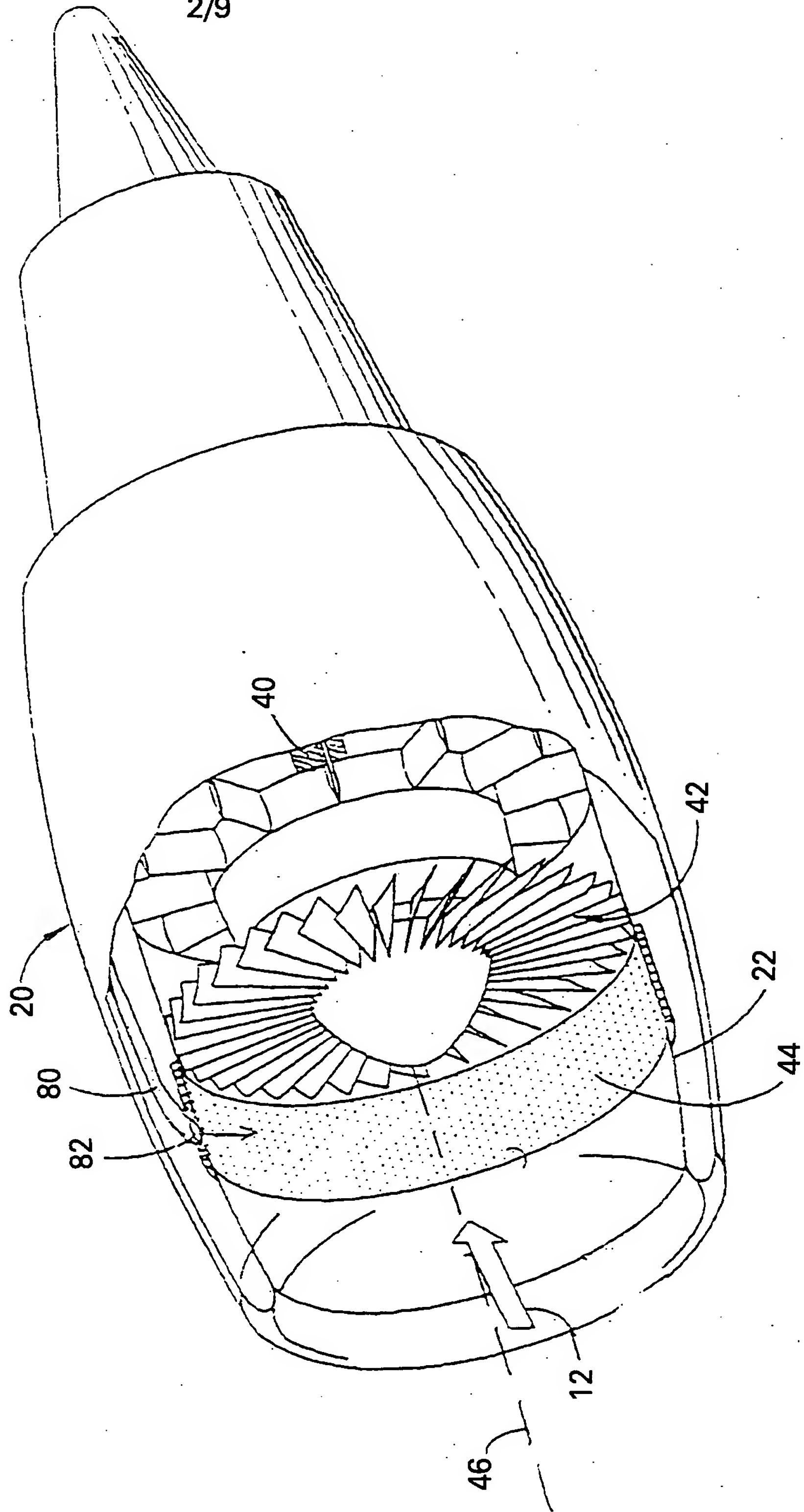
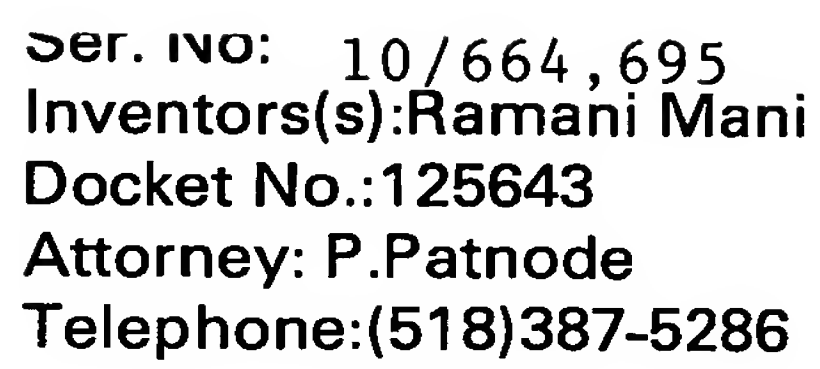


FIG. 2



3/9

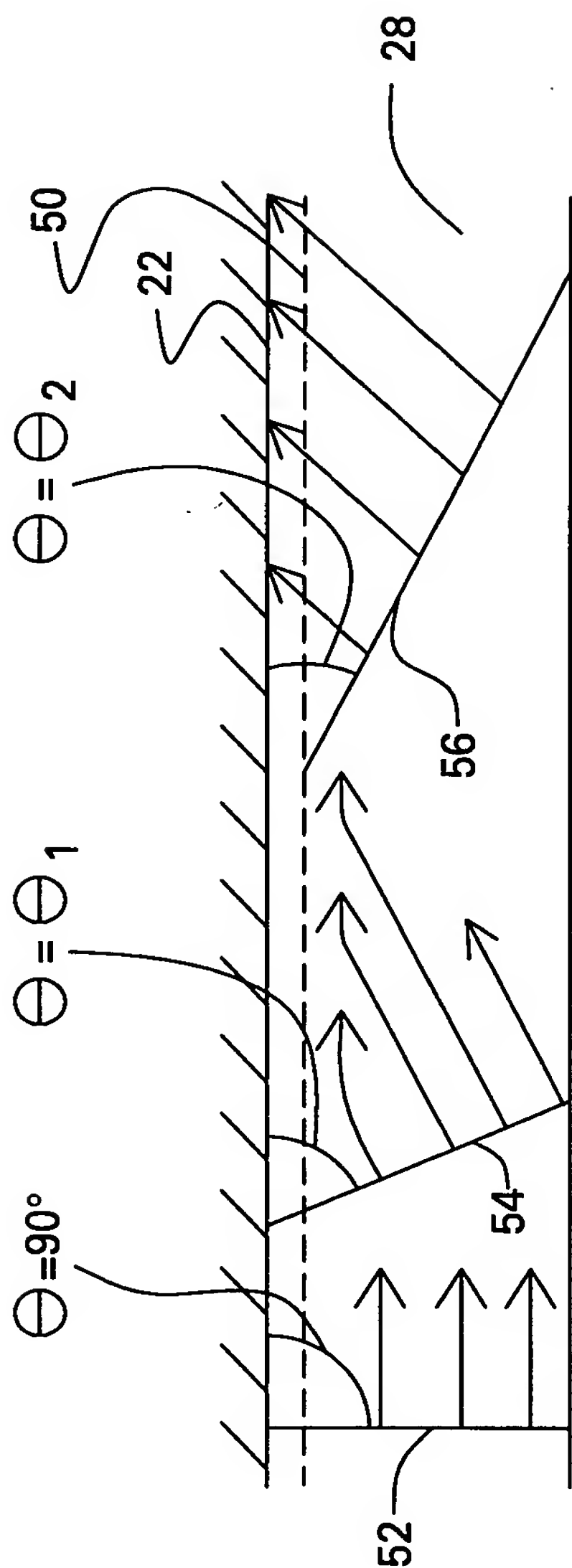


FIG. 3.

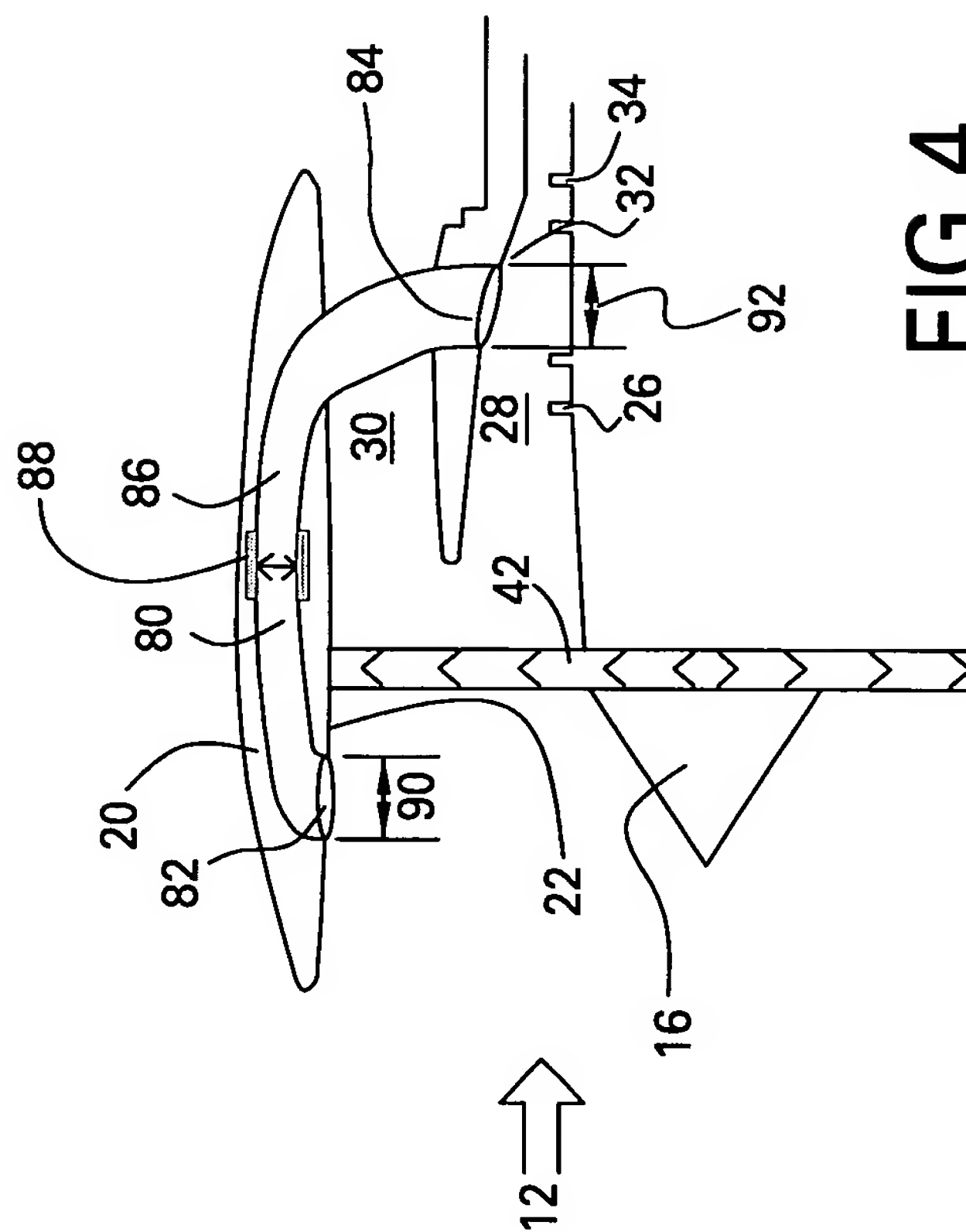


FIG. 4

FIG. 5

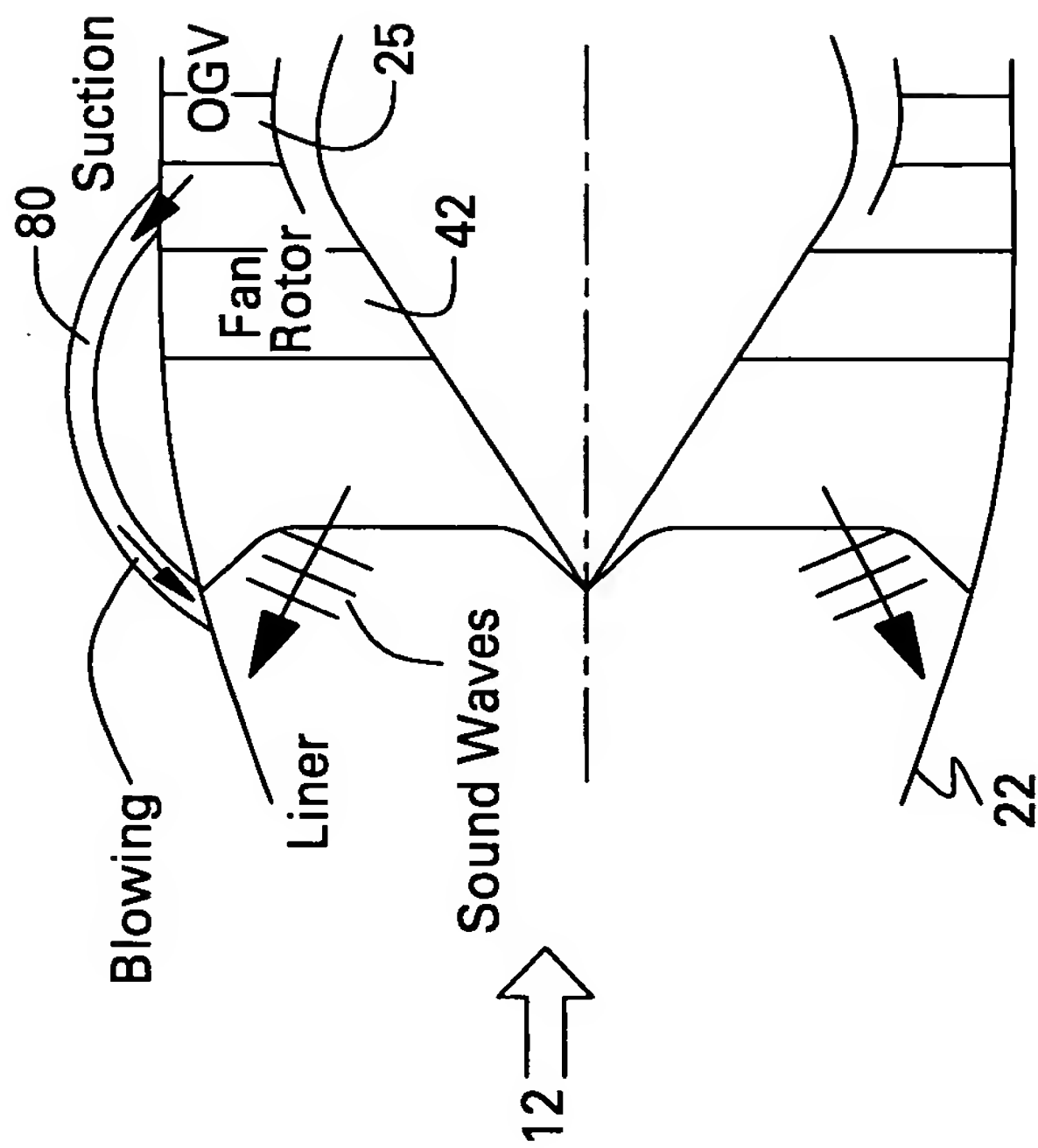
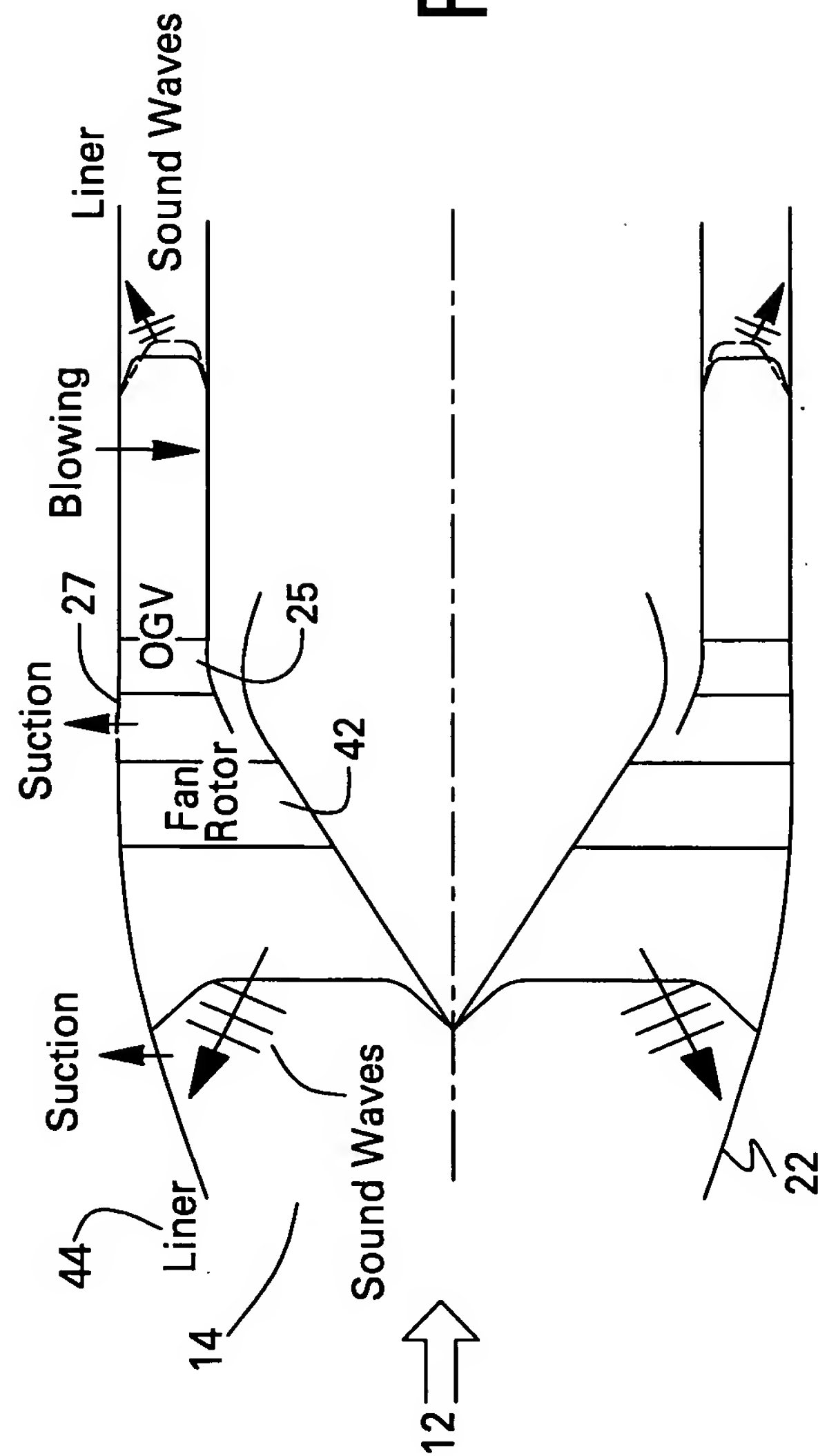


FIG. 6





Ser. No: 10/664,695
Inventors(s): Ramani Mani
Docket No.: 125643
Attorney: P. Patnode
Telephone: (518) 387-5286

5/9

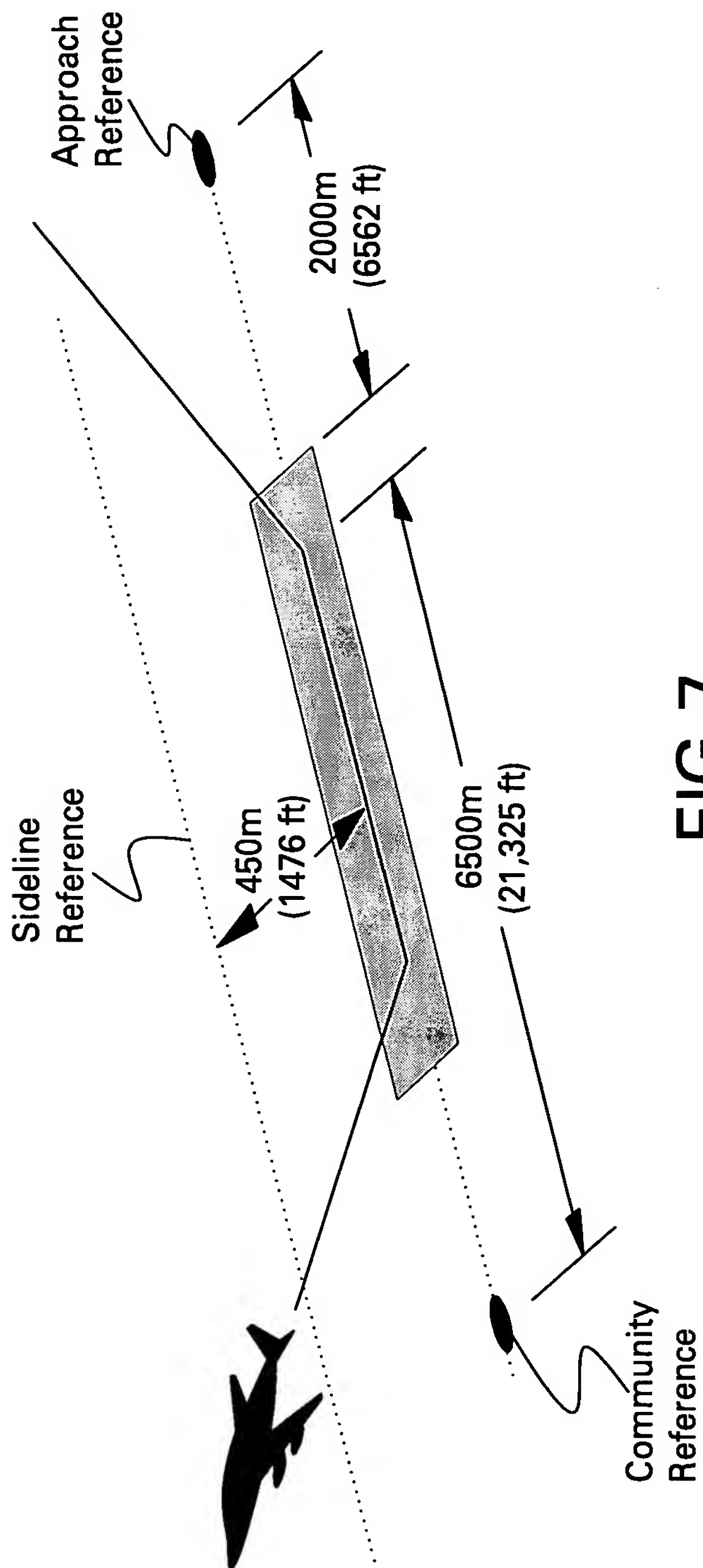


FIG. 7



Ser. No: 10/664,695
Inventors(s): Ramani Mani
Docket No.: 125643
Attorney: P. Patnode
Telephone: (518) 387-5286

6/9

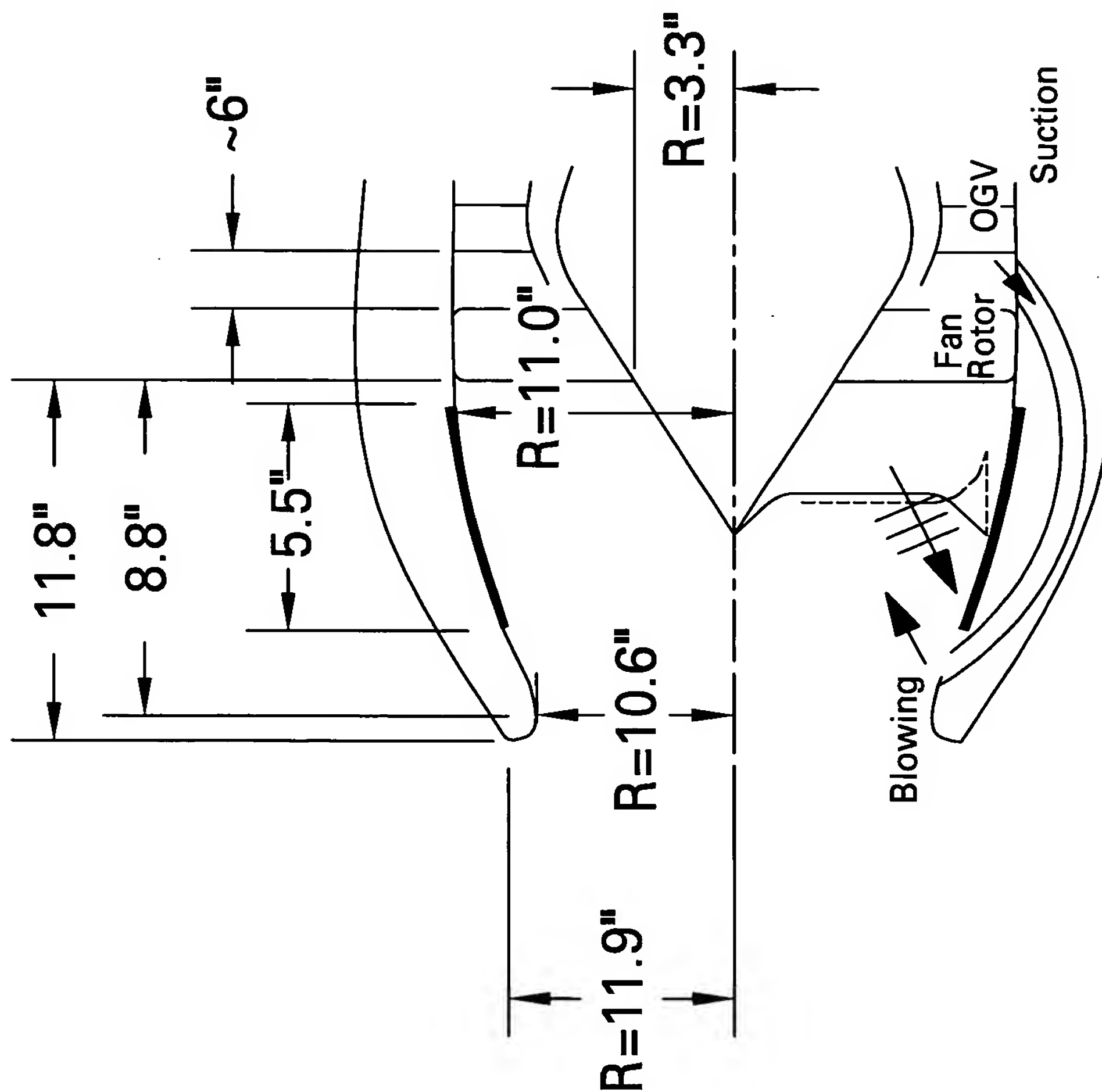


FIG. 8



Ser. No: 10/664,695
Inventors(s): Ramani Mani
Docket No.: 125643
Attorney: P. Patnode
Telephone: (518) 387-5286

7/9

Increase air velocity adjacent to an inlet fan duct outer wall, to a greater rate than typical velocity of an operational engine ambient inlet air flow adjacent to the inlet fan duct outer wall.



Reduce a boundary layer and associated turbulence adjacent to the inlet fan duct outer wall.



Optimize refraction and absorption of inlet sound into an acoustic liner along the inlet fan duct outer wall.



Inject air adjacent to the inlet fan duct outer wall and substantially directed aft a fan, wherein the injected air is distinct from ambient inlet air.



Extend air injection axially.



Extend air injection with substantial circumferential uniformity.



Inject a mass-flow of air within a range of one percent to two percent of the ambient inlet air.



Draw air from at least one of a bypass flow stream (downstream a fan rotor and upstream a fan discharge outlet guide vane) and a core flow stream.



Create a pressure difference to self-aspirate the injecting air, wherein the inlet fan duct area has a first variable pressure, the bypass flow stream has a second variable pressure and the core stream has a third variable pressure.

FIG.9



Ser. No: 10/664,695
Inventors(s): Ramani Mani
Docket No.: 125643
Attorney: P. Patnode
Telephone: (518) 387-5286

8/9

Exert a suction force on ambient inlet air adjacent to the inlet fan duct outer wall



Draw a mass-flow rate of the ambient inlet air within a range of one to two percent of the ambient inlet air.



Inject air to aft fan discharge outlet guide vane

FIG.10



Ser. No: 10/664,695
Inventors(s): Ramani Mani
Docket No.: 125643
Attorney: P. Patnode
Telephone: (518) 387-5286

9/9

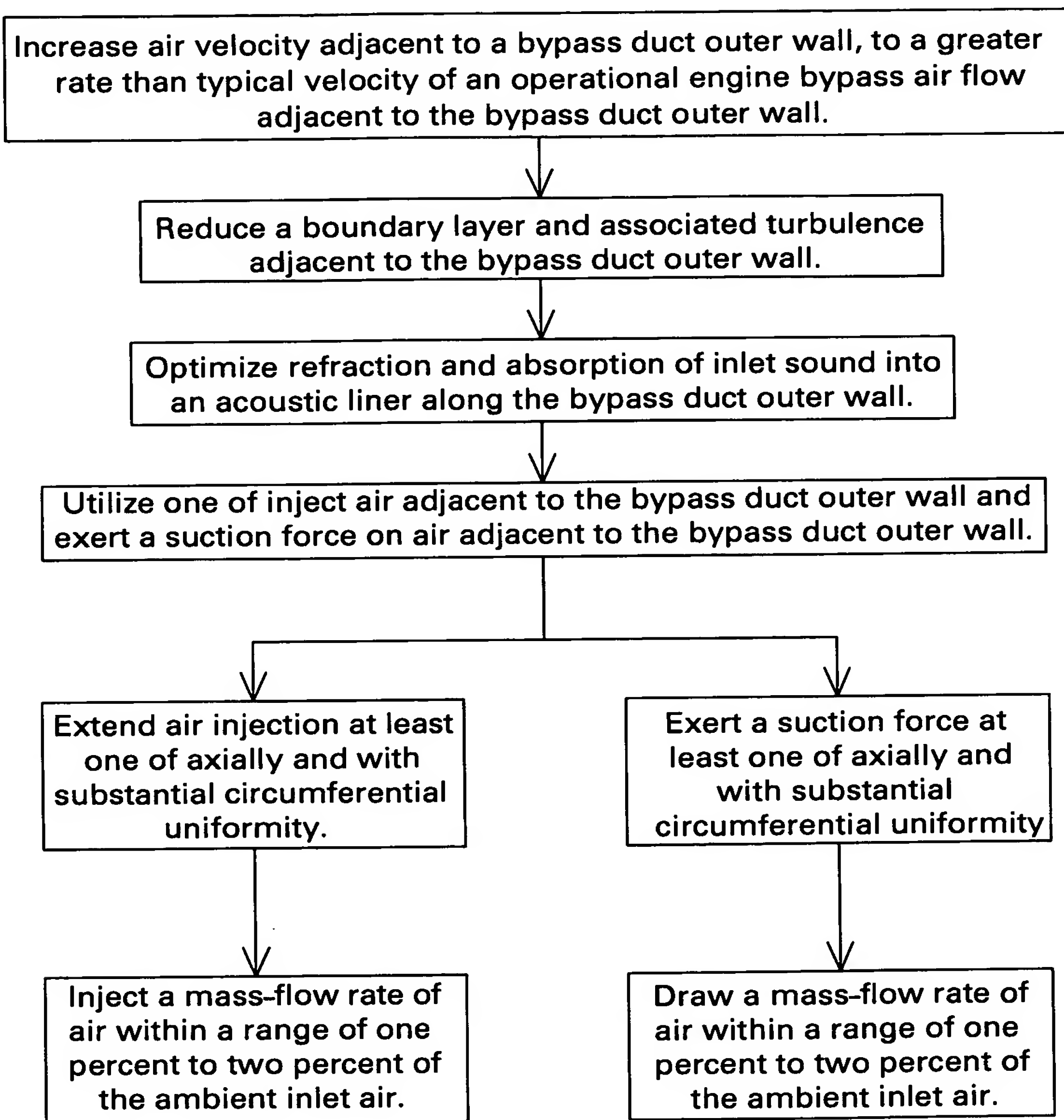


FIG.11